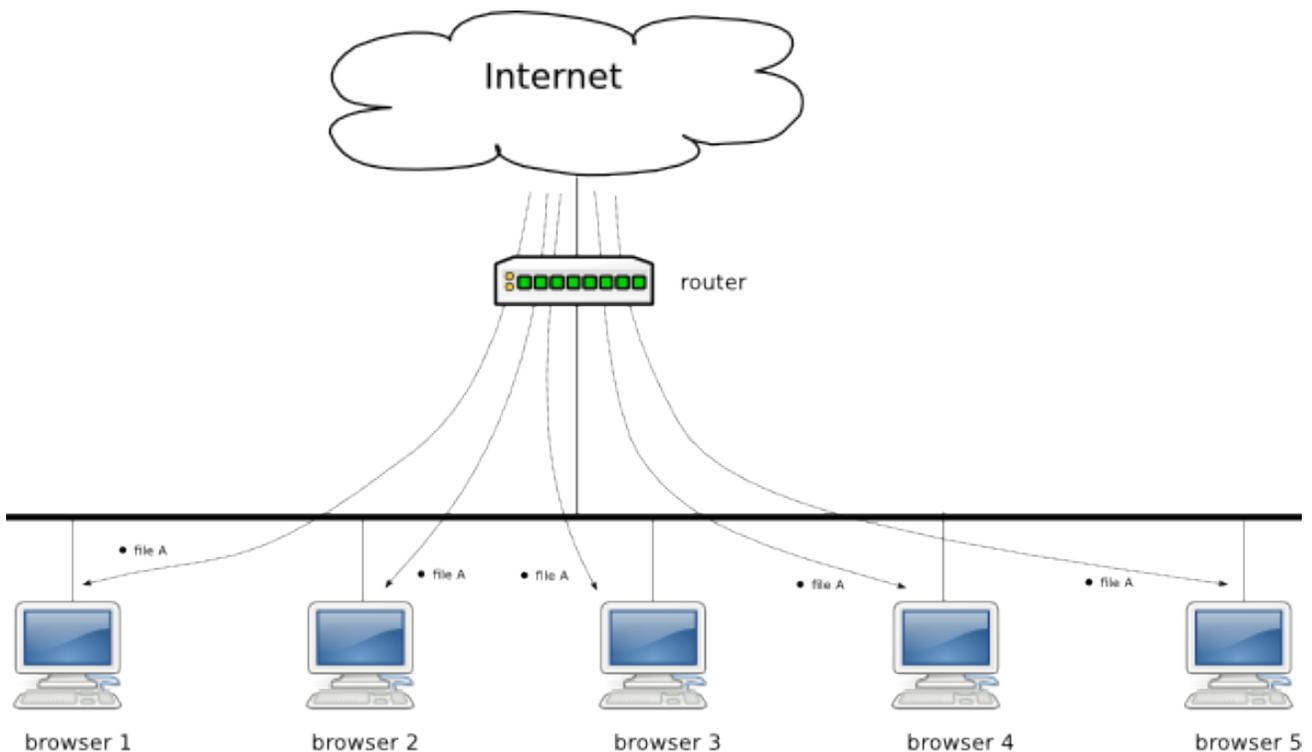


This guide is designed for the IT System Administrators of schools using Jacaranda's **Knowledge Quest: English online game**.

It is common for institutions and corporations to use proxy-caching servers/appliances to control internet access. The reasons for this include security, bandwidth control and increased efficiency of resources used. Note that, for the reasons specified above, the use of a proxy-caching server is strongly recommended.

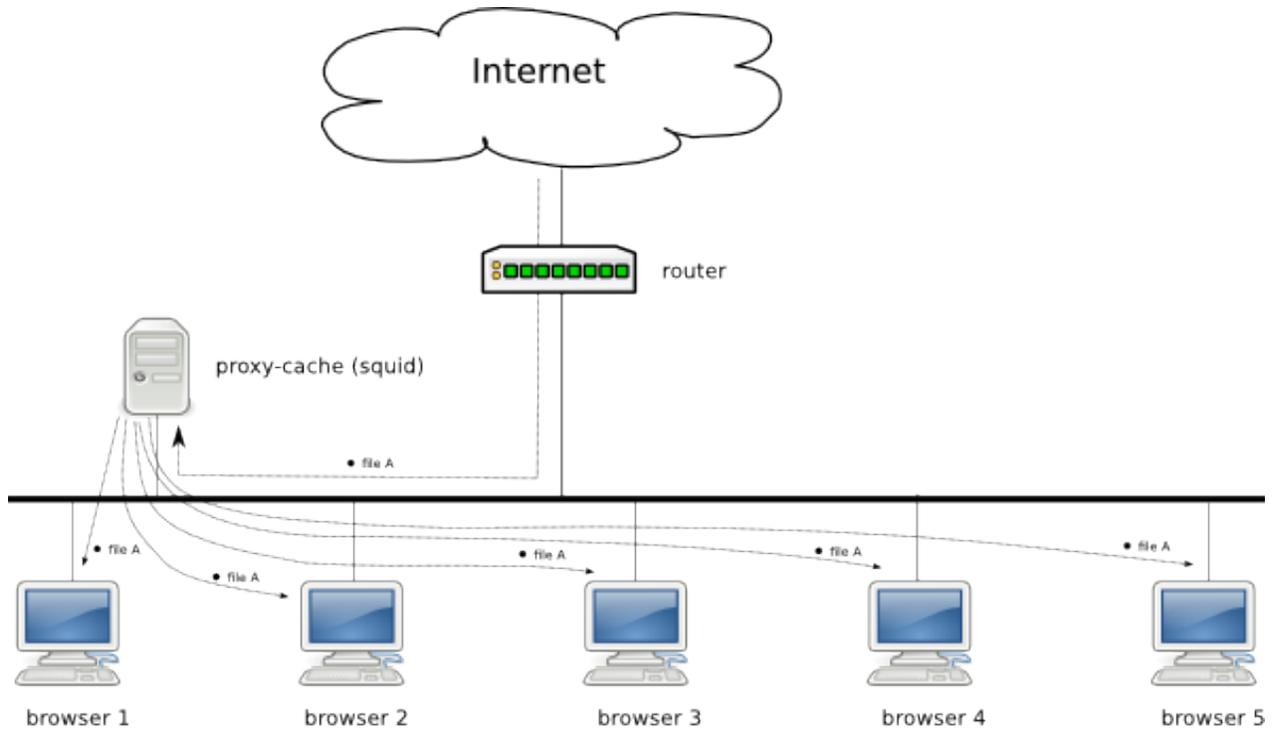
The following two diagrams illustrate the advantages of using a proxy-caching server.



browsers 1 - 5 have to get file A from the Internet. file A is downloaded from the Internet 5 times..

### Environment without a Proxy Server

An environment without a proxy-caching server usually results in a much higher usage of internet bandwidth.



proxy-cache server gets a copy of file A. browsers 1 - 5 get file A from the proxy-cache directly without the need to get it from the Internet. file A is only downloaded once from the Internet.

### Environment with a Caching Proxy Server

In contrast, a proxy-caching server will usually lead to increased efficiency of the use of the available internet bandwidth.

A proxy-caching server will greatly improve the performance of not just the Knowledge Quest application but any internet application. If the school's environment is new to using a proxy, in addition to putting in a new proxy-caching server, browsers will also need to be configured to use the proxy (unless a transparent proxy is used in the schools environment). Please refer to <http://wiki.squid-cache.org/SquidFaq/ConfiguringBrowsers> for browser configuration.

One very popular, free proxy-caching server is Squid. If Squid is to be used as the school's proxy-caching server, please refer to <http://www.squid-cache.org> and <http://wiki.squid-cache.org/SquidFaq/BinaryPackages> for more information.

The following information provides the recommended configuration for Squid.

### Disk Caching

Set up the proxy-caching server to keep cache on the disk; a minimum disk cache of 2 GB is recommended. This is done by adding the following line in Squid:

```
cache_dir ufs /var/spool/squid 1000 16 256
```

Please note that if a Windows Squid proxy is used the path to the cache directory will be different.

## Cache Knowledge Quest Files

To ensure that the required Knowledge Quest files will be cached for a minimum of one month, the following line will need to be added into Squid:

```
refresh_pattern -i \.kquest\.com\.au\.*(\.swf|\.mp3|\.jpeg|\.jpg|\.xml|\.gif) 28800
100% 10080 ignore-reload ignore-no-cache
```

Be sure to note the file types that will be cached.

## Sample Configuration for Squid

This is only a sample squid.conf file. Please ensure the port, access control and any other changes to the file are appropriate for your institution.

```
#
# Recommended minimum configuration:
#
acl manager proto cache_object
acl localhost src 127.0.0.1/32 ::1
acl to_localhost dst 127.0.0.0/8 0.0.0.0/32 ::1

# Example rule allowing access from your local networks.
# Adapt to list your (internal) IP networks from where browsing
# should be allowed
acl localnet src 10.0.0.0/8 # RFC1918 possible internal network
acl localnet src 172.16.0.0/12 # RFC1918 possible internal network
acl localnet src 192.168.0.0/16 # RFC1918 possible internal network
acl localnet src fc00::/7 # RFC 4193 local private network range
acl localnet src fe80::/10 # RFC 4291 link-local (directly plugged) machines

acl SSL_ports port 443
acl Safe_ports port 80 # http
acl Safe_ports port 21 # ftp
acl Safe_ports port 443 # https
acl Safe_ports port 70 # gopher
acl Safe_ports port 210 # wais
acl Safe_ports port 1025-65535 # unregistered ports
acl Safe_ports port 280 # http-mgmt
acl Safe_ports port 488 # gss-http
acl Safe_ports port 591 # filemaker
acl Safe_ports port 777 # multiling http
```

```

acl CONNECT method CONNECT

#
# Recommended minimum Access Permission configuration:
#
# Only allow cachemgr access from localhost
http_access allow manager localhost
http_access deny manager

# Deny requests to certain unsafe ports
http_access deny !Safe_ports

# Deny CONNECT to other than secure SSL ports
http_access deny CONNECT !SSL_ports

# We strongly recommend the following be uncommented to protect innocent
# web applications running on the proxy server who think the only
# one who can access services on "localhost" is a local user
#http_access deny to_localhost

#
# INSERT YOUR OWN RULE(S) HERE TO ALLOW ACCESS FROM YOUR CLIENTS
#

# Example rule allowing access from your local networks.
# Adapt localnet in the ACL section to list your (internal) IP networks
# from where browsing should be allowed
http_access allow localnet
http_access allow localhost

# And finally deny all other access to this proxy
http_access deny all

# Squid normally listens to port 3128
http_port 3128

#cache_mem 800 MB

# Uncomment and adjust the following to add a disk cache directory.
cache_dir ufs /var/spool/squid 2000 16 256

```

```
# Leave coredumps in the first cache dir
coredump_dir /var/spool/squid

logformat combined %>a %ui %un [%t1] "%rm %ru %rp HTTP/%rv" %>Hs %<st "%{Referer}>h"
"%{User-Agent}>h" %<st %Ss:%Sh
access_log /var/log/squid/access.log combined

cache_log /var/log/squid/cache.log
# debug_options ALL,(1-9)
debug_options ALL,2

# Add any of your own refresh_pattern entries above these.
refresh_pattern -i \.kquest\.com\.au\.*(\.swf|\.mp3|\.jpeg|\.jpg|\.xml|\.gif) 28800
100% 10080 ignore-reload ignore-no-cache
refresh_pattern ^ftp: 1440 20% 10080
refresh_pattern ^gopher: 1440 0% 1440
refresh_pattern -i (/cgi-bin/|\?) 0 0% 0
refresh_pattern -i (/cgi-bin/) 0 0% 0
refresh_pattern . 0 20% 4320
```